

State of Washington
Salmon & Watershed Information Management Technical Advisory Committee
Data Management and Sharing Guidelines

Purpose

To enhance the States investment in natural resource data and to facilitate data sharing and coordination, the Salmon and Watershed Information Management Technical Advisory Committee (SWIMTAC) adopts the following Data Management “Guidelines”. These guidelines are adopted on behalf of the participating agencies and represent the preferred practices of the participating agencies in regard to data management, data sharing, and data coordination. Several of the ‘guidelines’ referenced in this document are state agency IT Standards and as such are not optional but requirements for state agencies.

Background

Access to information related to salmon recovery and watershed health is a critical unmet need for many of the partners working to manage our precious natural resources. The Joint Natural Resources Cabinet (JNRC), the Salmon Recovery Funding Board (SRFB), and SWIMTAC have identified access to information as a gap and a primary focus point to improve salmon and watershed information management.¹

Washington state agencies have put significant effort and dedicated over \$200 million dollars (state and federal funds) toward salmon recovery since 1999.

One of the major problems with reporting recovery success and in developing performance standards is the lack of composite statistics showing the cumulative actions of all state agencies and local government in restoring and protecting habitat. These ***Data Management and Sharing Guidelines*** are intended to coordinate and make available state agency databases and participating local governments with salmon and watershed health databases.²

Data Management, Coordination and Sharing Principles

SWIMTAC have endorsed the following principles related to data coordination, management and sharing

1. To the extent possible and necessary, the participating agencies will condition their internal policies, contracts, and databases that affect salmon and watershed data to comply with these “Guidelines”.
2. All salmon recovery partners will receive these “Guidelines” describing data exchange guidelines and metadata content and format instructions. Training and support will be provided as partners are encouraged to meet these guidelines.
3. Before creating a new dataset, agency staff from participating agencies shall search the data portal and other clearinghouses to see if the data already exists and work to coordinate, not duplicate.
4. The SWIMTAC will work on developing standard keywords to help data portal users locate information relevant to their needs
5. The SWIMTAC through the SWIM Coordinator will work with the Salmon Recovery Funding Board as well as other salmon recovery partners to design win-win data coordination and sharing incentive programs.
6. The SWIM Coordinator will communicate, educate, and promote these guidelines and incentives and act as liaison with the natural resource cabinet agencies, the Office of Financial Management, WAGIC and other appropriate forums.³

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7. The SWIM Coordinator position will be employed and supervised by The Office of the Interagency Committee (IAC) Salmon Recovery Funding Board (SRFB) however, the position will report to the SWIMTAC.

Data Exchange Format Guidelines

Data guidelines facilitate efficient data integration and information sharing. Access, analysis, and collaboration will be greatly improved by agencies using standard formats for data exchange and metadata. (Metadata is data about data: the date monitoring data was collected, for example.)

Agencies use an array of software tools to manage their data. Data collectors need the flexibility to decide how to store and maintain their data to meet their internal business needs. However, standardizing the formats for data exchange will benefit everyone involved in coordinated salmon recovery. All data collectors are encouraged to support the following guidelines.

1. Participating agencies will use one or more of the following data export formats for their data.
 - ***Spatial data:*** XML, E00, DLG, DWG, SDTS, SHP (vector), ADRG, BIL, TIFF (raster), ESRI grid.
 - ***Tabular data:*** XML, Spreadsheets: XLS (MS Excel), Quattro, and Databases: MDB (MS Access), DBF (Dbase). Data should also be offered in CSV or comma/quote delimited ASCII for users without access to the proprietary products.
 - ***Text (Including metadata):*** ASCII, HTML, PDF, RTF, doc (MS Word), and WPD (WordPerfect)
 - ***Graphics:*** PDF, HTML, JPG, GIF, TIF, PNG, SVG
 - ***Archive/compression:*** TAR, ZIP
2. Data providers will plan to offer multiple formats when possible to make it easier for people with different software to access their data.

Data Licensing Guidelines

Data licensing policies vary across Washington state agencies. Lack of uniformity in licensing and in methods of acknowledging the terms of the license creates unnecessary barriers to data access. SWIMTAC recognizes that it will take time to work out the legal and procedural issues but in the interim recommends the following:

1. Participating agencies will adopt an online data agreement process rather than requiring signed paper agreements. This will facilitate the distribution and exchange of data over the Internet.
2. Agencies will work with their attorneys to ensure their liability, licensing, and non-disclosure needs are covered when data is provided through the web.

Data Access Guidelines

Participating agencies agree to make their data available for discovery and access through the SWIM portal by one or more of the following methods:

1. Metadata and data posted to portal or 'registered' with portal to allow access via distributed search mechanism
2. Metadata posted to portal with data access through an embedded link in metadata

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3. Metadata posted to portal with instructions on how data can be accessed

Spatial Data Standards

Determining and referencing location is a fundamental value of spatial information. Spatial data built on common technical standards of registration (datum) and reference (coordinate system) provides the foundation for integration and reuse of the States investment in spatial data. The Information Services Board (ISB) on February 6, 2003, adopted state agency technical standards related to Datum and Coordinate Systems and metadata for significant geo-datasets.

Datum & Coordinate System Standard

Following are the spatial data standards adopted⁴ and applicable to natural resource agencies:

Datum

1. The 1991 adjustment of the “North American Datum 1983” (also known as HARN, High Accuracy Rectangular Network), is the standard horizontal control network for state agencies and participating SWIMTAC participating organizations. This datum is published by the National Geodetic Survey of the United States Department of Commerce.

Coordinate System

1. The standard coordinate system shall be Washington Coordinate system of 1983 (WCS 83). Alternately, Geographic Coordinate System may be used.
2. The Washington Coordinate System of 1983 shall be the standard projection and coordinate system. This system of (state) plane coordinates has been established by the National Geodetic Survey for defining the positions of points on the surface of the earth⁵.
3. The WCS 83 North Zone or WCS 83 South Zone should be used as appropriate.
4. WCS83 South Zone should be used when the geo-dataset is a statewide layer or when a regional layer crosses zones.

Metadata Standards

Metadata plays a fundamental role in successful spatial data management. Standardized data documentation (metadata) protects organizations data investments and, where appropriate, facilitates data reuse and data discovery. An important purpose of metadata is to help users determine which data will be most useful to their needs, and to help ensure data is used correctly.

Metadata Standard for state agency (please see details for standard⁶)

1. The *Content Standard For Digital Geospatial Metadata* developed by the Federal Geographic Data Committee (FGDC) shall be used for all types of data (current version 2.0 and subsequent FGDC/ISO 19115 versions).
2. To facilitate implementation of the standard, the Washington State Geographic Information Council (WAGIC) *Basic* and *Working* subsets of the FGDC Content Standard Digital Geospatial Metadata are recognized as an approved implementation pathway.
3. Metadata will be sent whenever data is exchanged.

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Metadata requirements for all participating non-state agency datasets:

Metadata, at a minimum, should always include the following basic elements:

1. Title of dataset
2. Brief description of dataset content and purpose
3. Spatial reference, datum, and coordinate system.
4. Contact name, phone number, email address, position, and organization
5. Begin and end date of content
6. Theme and place keywords.
7. Data collection methods
8. Use constraints

Additional Data Operational Guidelines

1. The LLID (Longitude Latitude Identifier) as assigned in the Northwest Hydrography Framework data layers shall be the standard stream identifier for data exchange. When it is not available, the Stream Catalog identifiers should be used.
2. Users need to be aware of scale differences when integrating data, and be knowledgeable about how to interpret the results. Different scale is needed for different uses of data. Counties may use fine scale 1:2400 data, which is not currently feasible for state agencies. The 1:24000 scale is used by many state agency data projects, including the hydrography layer. An even coarser scale is acceptable for screening projects using remote sensing or other methods.
3. SWIMTAC will promote the use of migration tools developed by the Federal Geographic Data Committee (FGDC) to facilitate the eventual move from FGDC Content Standard for Digital Geospatial Metadata to the emerging ISO/ANSI Metadata standard.

¹ SWIMTAC is chaired by the SWIM Coordinator. It was created by the JNRC in 2001 to provide an interagency team of the leading information technology experts from the JNRC participating agencies. The JNRC includes: the Departments of Agriculture (WDA), Fish and Wildlife (WDFW), Ecology (ECY), Natural Resources (WDNR), Health (DOH), Parks and Recreation (WSPR), Community Trade and Economic Development (CTED), Transportation (WSDOT) and the Interagency Committee For Outdoor Recreation (IAC), Office of Financial Management (OFM), and the Puget Sound Action Team (PSAT). The SWIMTAC includes participants from all of the above agencies and in addition includes the Northwest Indian Fisheries Commission (NWIFC), and the Department of Information Systems (DIS). The SWIM coordinator position was provided with ongoing funding and support by the Legislature in the 2003-05 Biennial Budget.

² The U.S. Congress Conference Report (108-10) regarding appropriations for federal fiscal year 2003 stated: "The conferees note the lack of accountability and performance standards for resources distributed to restore endangered and threatened salmon through the Pacific Coastal Salmon Recovery Fund.....The conferees understand that some mechanism is necessary to assure legal and fiscal accountability for distribution of funds to States with listed salmon species."

³ It is also recognized that a larger scale process has begun to coordinate databases throughout the Pacific Northwest. This coordination has begun through the Pacific Northwest Aquatic Monitoring Partnership (PNAMP).

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⁴ Refer to the ISB IT Policy & Standards website at <http://dis.wa.gov/portfolio> for the complete document text for *Geographic Information Technology Standards for Metadata*.

⁵ If State Plane coordinates are not available, the geospatial data may be stored as a Latitude/Longitude coordinate system in decimal degrees with negative West longitudes and positive North latitudes.

⁶ Refer to the ISB IT Policy & Standards website at <http://dis.wa.gov/portfolio> for the complete document text for *Geographic Information Technology Standards for Horizontal Datum and Coordinate System*.